

**PLASMON-ENHANCED TAPERED OPTICAL FIBERS****ABSTRACT OF THE DISCLOSURE**

An apparatus includes an optical fiber and an electrically conducting layer. The optical fiber has a tapered portion with a lateral surface and an end face. The  
5 electrically conducting layer is located on a portion of the lateral surface of the tapered portion. The tapered portion and electrically conducting layer are configured to generate surface plasmons that propagate along a surface of the conducting layer in response to light of a preselected wavelength arriving at an end of the tapered portion.